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ABSTRACT

Any series of studies which attempt to deal with the problems of conflict and lack of communication among blacks and whites in job settings must logically include some empirical analysis of these conflicts. This paper uses an information content analysis of critical incident data. The critical incident methodology focuses on specific instances of behavior which provide positive or negative outcomes, attempting to give specific behavioral referents to positive or negative evaluations. Because it is both an exploratory technique and one which is tied to behavior, it is well suited for the generation of real-life conflicts which may then be used as stimuli in studies of training effectiveness. Critical incidents were collected from 11 black and 13 white workers from a number of Champaign and Urbana firms, by interviewers of the same race as the respondent. Workers were asked about incidents of conflict between themselves and members of the other race. To perform the content analyses, the authors first read the texts of all black and white respondents. A system of categories, based on the texts, was then devised separately for white and black subjects. Texts were numbered and checks were placed under each category name present in a given text. Categories and text codings represent the consensus of the authors. (Author/JM)

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DEPARTMENT OF PSYCHOLOGY

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

CHAMPAIGN, ILLINOIS 61820

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Illinois Studies of the Economically Disadvantaged

# AN ATTRIBUTION THEORY ANALYSIS OF INTERRACIAL CONFLICT IN JOB SETTINGS

Andrew R. Davidson

and

Jack M. Feldman

University of Illinois

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Harry C. Triandis
Principal Investigator

# AN ATTRIBUTION THEORY ANALYSIS OF INTERRACIAL CONFLICT IN JOB SETTINGS[1]

Andrew R. Davidson and Jack M. Feldman

University of Illinois

Any series of studies which attempt to deal with the problems of conflict and lack of communication among blacks and whites in job settings must logically include some empirical analysis of those conflicts. The work of Triandis and his associates (Triandis & Malpass, 1971; Triandis, Feldman, & Harvey, 1970, 1971a, b, c; Crandall, in preparation; Triandis, Weldon & Gwynn, in preparation) has focussed either on differences in the subjective culture of blacks and whites or the perception of simulated black-white conflicts generated according to a pre-existing theoretical framework (Smelser, 1963). While valuable, such studies do not provide information on the types of conflict which actually occur in job settings.

Two separate lines of inquiry have been used in an attempt to provide such information. The first, essentially a participant observation technique, was used by Malpass and Symonds (1971), who hired two young black men as summer assistants; their reflections on this experience, along with comments by the workers, are presented in their paper. The second, represented by this paper, is an informal content analysis of critical incident data (Flanagan, 1954) collected by these black employees and John Symonds in the summer of 1969.

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The critical incident methodology focusses on specific instances of behavior which produce positive or negative outcomes, attempting to give specific behavioral referents to positive or negative evaluations. Because it is both an exploratory technique and one which is tied to behavior, it is well suited for the generation of real-life conflicts which may then be used as stimuli in studies of training effectiveness. Also, the content analysis of such data may provide clues as to the appropriate theoretical framework for conducting studies of interracial conflict on the job.

We have used critical incident data as a starting point for a discussion of the application of current attribution theory to the problem of interracial conflict and misunderstanding in job settings. The presentation of this data is not intended as a formal analysis, but rather as an extensive example and introduction to the following theoretical discussion. The data are presented first because it was the authors' attempt to conceptualize such incidents which led to the adoption of attribution theory as an analytical tool.

Data Collection and Categorization

Critical incidents were collected from eleven black and thirteen white workers from a number of Champaign and Urbana firms, by interviewers of the same race as the respondent. Workers were asked about incidents of conflict between themselves and members of the other race.

In addition, black respondents were asked their age, family size, marital status, number of dependents, occupational status, and employment history over the past two years.

To perform the content analyses, the authors first read the texts of all black and white respondents. A system of categories, based on the texts, was then devised separately for white and black subjects. Texts were

numbered and checks were placed under each category name present in a given text. Categories and text codings represent the consensus of the authors. They are not intended to be mutually exclusive.

Black respondents' categories were:

1. Rule violations--violation of formal work or safety rules.

2. Special requirements--requiring more or better preformance of blacks than whites.

3. No appreciation of special circumstances--lack of allowance for conditions, such as broken homes, lack of telephones, etc.

4. Prejudice and discrimination--anti-black bias shown by foremen and other workers.

5. Resentment by blacks--dislike of white employees, supervisors.

White categories were:

1. Lack of initiative--black workers don't actively seek to keep busy on the job, or to learn about the job.

2. Frequently absent--blacks often do not show up for work.

3. Frequently tardy--often come to work late

4. Special favors--boss makes allowances for blacks that he wouldn't for whites.

5. Loner--does not join other workers at lunch, break, etc.

6. Works well when working--performs specific job requirements well.

## Impressions of the Data

### Black Respondents

Table 1 presents the results of the content analysis of black respondents' data. As can readily be seen, the most common themes in these data are perceived prejudice and discrimination, and consequent resentment of whites by blacks. Violation of rules by blacks are also reported

frequently, although the attendant punishment is often seen as a function of prejudice. In general, loss of a job, discipline, or failure to get a job are seen as results of prejudice even when rule violations are freely admitted. While a measure of prejudice almost certainly exists, there is perhaps a tendency on the part of these black respondents to attribute any negative feedback from a coworker or supervisor to anti-black feelings. Probably such misperceptions feed on themselves, with suspicion of prejudice leading to hostility which leads to negative responses and increased prejudice from whites, and so on until the inevitable conflict occurs.

White Respondents

Table 2 presents the results of the content analysis for the white respondents. For purposes of discussion it is easiest to divide these incidents into two groups, those pertaining to incidents that arise while the participants involved are actually on the job, and those pertaining to problems of attendance. On-the-job situations can also be divided into two categories: (a) actual task or work performance, which involves certain formal role requirements for each participant, and (b) those times between task performance (e.g., break time) for which there are only informal norms governing behavior. In reference to actual task performance, one of the most frequent comments made by these respondents in describing a black coworker is, "he works well while he is working." In fact, it was only once suggested that a black was not performing his work satisfactorily, and no critical incidents occurred while the participants were actually performing their tasks. This absence of interracial problems while participants are performing their task is not surprising, as much behavior while doing a blue-collar job is determined by formal task requirements. Even interpersonal interactions involving cooperation or coordination required to complete the job are to a large degree determined by the nature of the task.

Table 1

Black Content Categories

| Incident Number | Category: Rule Violation | Special Requirements for Blacks | No Appreciation by Whites of Special Circumstances | Prejudice & Discrimination | Resentment by Blacks |
|---|---|---|---|---|---|
| 1. No promotion | | ✓ | | ✓ | ✓ |
| 2. Angry at white worker | ✓ (by white) | | | | ✓ |
| 3. Was high on drugs | ✓ | | | ✓ | ✓ |
| 4. Union organizer | ✓ | ✓ | | ✓ | ✓ |
| 5. Could not get to work | | | ✓ | ✓ | ✓ |
| 6. N/C* | ✓ | | | | |
| 7. Did not get job | ✓ | | | ✓ | ✓ |
| 8. Was in prisor | | ✓ | | ✓ | ✓ |
| 9. N/C | | | | ✓ | ✓ |
| 10. Suspicious policeman | | | | ✓ | |
| 11. N/C | | | | ✓ | ✓ |
| Totals | 5 | 3 | 1 | 9 | 9 |

*No specific corment

Table 2

White Content Analysis

| Incident Number | Category: Lacks Initiative | Frequently Absent | Frequently Tardy | Gets Special Favors from Boss | Loner | Works Well When Working | Comment |
|---|---|---|---|---|---|---|---|
| 1 | ✓ | ✓ | | | | ✓ | N/C |
| 2 | ✓ | ✓ | ✓ | ✓ | | ✓ | N/C |
| 3 | | | | | | | Dropped his time card so that foreman had to pick it up |
| 4 | | | | | | | Flashed razor while josteling with black coworker |
| 5 | | | | | | ✓ | Disparaged country and astronauts |
| 6 | | | | | | ✓ | Brags he will soon get foreman's job |
| 7 | | ✓ | | | ✓ | ✓ | Eats alone |
| 8 | | ✓ | ✓ | | | | N/C |
| 9 | | | | | | | Doesn't wear "proper" painter's clothes |
| 10 | ✓ | | | | | | Sat down when finished assigned job |
| 11 | ✓ | ✓ | ✓ | ✓ | | ✓ | N/C |
| 12 | | ✓ | | ✓ | | ✓ | N/C |
| 13 | ✓ | | ✓ | | ✓ | | Eats alone and eating habits are "odd" |
| Totals | 5 | 6 | 4 | 3 | 2 | 7 | 8 |

The on-the-job incidents that our white respondents report as critical occur during those times between actual task performance, i.e., category (b) above. During these times the norms for appropriate behavior are not as formalized, allowing behavior to be influenced by factors of subjective culture. The incidents that occur during this period are categorized most frequently under the topic of behaviors that deviate from the norm. Incidents placed in this category involve specific behaviors that were unexpected by the respondents, deemed inappropriate, and at times produced anger or fear.[2] Some examples of incidents that only had a single occurrence involved the black purposely dropping a time card so that the foreman had to pick it up, a black desparaging the accomplishments of the astronauts, a black bragging that he would one day get the foreman's job and a black pulling a razor while jostling with his black coworker. Inappropriate behaviors that continued over time involved a black who did not dress like other painters and a few cases of blacks who ate alone rather than eating with the white work crew of which he was a member.

An important interpretation which should be made at this point is that in most cases it was not solely the behavior of the black that turned these situations into critical incidents; rather, these behaviors were used as cues to infer intention and/or a disposition to the black and it was these intentions and dispositions that were evaluated negatively. Thus, eating alone is interpreted as rejection of the group; bragging is interpreted as conceit or a feeling of superiority; not wearing coveralls is interpreted as lack of interest in the occupation; and a dropped time card is deemed a purposeful event. Alternative interpretations were possible in each case, but not chosen; the why of this will be dealt with later.

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[2]To some extent all of these critical incidents involve the black performing some behavior considered inappropriate by the white respondent.

The other grouping of critical incidents concerns observations of the type dealt with by Malpass and Symonds (1971) under the topic of time and involvement. As shown in Table 2, our respondents report that blacks are frequently tardy and/or absent from work. Our respondents noted this behavior and considered it important enough to report, probably because it differed from their behavioral norm that employees should be prompt and dependable. Respondents frequently reported that the black's apparent deviance from this "well-established" norm was confusing to them and difficult to understand. If they perceived the black not being punished for his inappropriate behavior, some whites felt he was receiving special favors from the boss, which increased their resentment.

A remark made by many of our white respondents concerning a black coworker was "he lacks initiative." This statement is qualitiatively different from other incidents that are direct descriptions of behaviors. Rather, it is an attribution of a trait (or lack of one) most frequently inferred from high rate of tardiness and absence. As further evidence for the correctness of this inference, incidents were cited in which the black would stop work and wait until told what to do next when he had completed a job. For a more complete discussion of this topic, see Malpass and Symonds (1971, pp. 20-23). Attributional alternatives to "lack of initiative" are possible, from observations of these behaviors and situations, but were not chosen. We will discuss this problem in more detail in the next section.

## Thecretical Analysis

One of the points we emphasized in the results section is that behaviors themselves are not the primary cause of the critical incident, for these behaviors are only distal stimuli. Rather, it is the subject's interpretation of the proximal stimuli, composed of inferences and psychological

interpretations of these behaviors, that lead to the critical incident. It is not a black man dropping his time card that causes anger, but the inference from behavioral and situational cues that this was an intentional act designed to make the foreman look foolish. We are suggesting, then, that if one is to understand the nature of conflict situations that are likely to arise in interracial interactions, it is first necessary to understand how people process the available cues concerning another and his situation to arrive at an attribution of intent and/or disposition. Based on the available experimental literature we propose the following argument: Attributions to members of a different culture seem especially susceptible to errors, leading to needless misunderstandings and barriers in communication between members of different cultures. There appears to be a need for competence (White, 1959) in the prediction of behavior, and as attributions of incorrect dispositions to another should lead to poor predictability of subsequent behavior, people should be motivated to make, or learn to make, "correct" attributions. This argument implies that a training program designed to increase understanding and communication between blacks and whites might do well to adopt a format whereby the trainee is taught the principles necessary for veridical attribution.

Attribution Theory

"Attribution refers to the process of inferring or perceiving the dispositional properties of entities in the environment" (Kelley, 1967, p. 193).

Attribution may be said to be "unbiased" if it assigns weights to all the different types of available information (i.e., race, mode of dress, behavior, etc.) which correspond to the objective joint and conditional probabilities which associate a given trait with the different information types. In other words, does the perceiver, given the totality of available

information, assign a greater importance to one or more types of information than would be warranted by a consideration of objective probabilities (based on the population as a whole)? If this is so, the resulting attribution is said to be "biased."

An attribution may be termed "rational" (or "logical," or "consistent") if it is made in a constant, systematic manner--that is, if the process (which maybe unique to the individual) is constant across all stimulus persons and is free from logical contradictions within the subset of available information. Thus, an individual's attribution system (or "implicit personality theory") may be biased and rational simultaneously.

An attribution may be called "veridical" if the level of a disposition or trait attributed to an actor is, in fact, the level of that trait which would be assigned by some independent, entirely objective process. By objective, we mean a process free from errors of social desirability, response bias, stereotyping, etc. Personality testing may be viewed as an attempt at such a process. Of course, this is an ideal state, having the same empirical status as the perfect vacuum or frictionless surface.

Intercultural or interracial attributions seem to be especially susceptible to non-veridicality, even when made in an unbiased and "rational" manner, due simply to lack of adequate information. This is analogous to the use of incomplete data in an otherwise satisfactory computer program. Of course, biases of one sort or another may also exist, as the prevalence of racial and ethnic stereotypes shows. These also must be considered in an analysis of interracial attribution.

Current theorizing on attribution theory stems primarily from the writing of Fritz Heider (1958) on the naive process of "common sense psycnology." The "naive analysis of behavior" involves the processing of

available information concerning the situation, the behavior, and its effects, and on the basis of this information arriving at an attribution of causality. Recently a number of theoretical papers have appeared attempting to outline, through a systematic treatment of Heider's notions, the conditions under which cues are presumed to reflect underlying dispositions (see Jones & Davis, 1964; Kelley, 1967; Steiner, 1971).

Our reasoning behind the application of an attribution model to interracial conflict situations is parallel to that of Byrne (1969), who used a reinforcement model in developing a theory of attraction. The use of an attribution model presents a tactical advantage in that "a wide variety of seemingly different stimulus conditions can be conceptualized in terms of a single unifying construct rather than as an infinite array of unrelated conditions each requiring a new set of explanatory conditions" (Byrne, 1969, p. 67). Also, the use of an attribution model serves a heuristic function in the generation of experimental situations and in the suggestion of variables possibly relevant to our investigation. In short, we will be using an attribution model as a guide to focus our search on relevant variables while at the same time extending attribution theory to problems of intercultural conflict.

Attribution theory is unique in psychology, with certain features that might be especially helpful in the later stages of a cultural training program. The naive process of attribution as described by Heider, Jones and Davis, and Kelley is distinctly parallel to the inference procedures involved in psychological research. The naive observer's attempt to infer covert dispositions from overt cues is similar to the process employed by the clinical diagnostician or the social psychologist measuring attitudes. In fact, making..."inferences regarding internal events" has been described

by Berkowitz (1965) as one of the distinctive characteristics of psychologists. The naive observer attempts to infer a stable disposition in the other in order to be more accurate in predicting the other's subsequent behavior. Similar motives frequently guide the psychologists.

Not only are there parallels between the overall goals and motivation of psychologists and naive observers, but the actual methodology of formal psychology and common sense psychology is also highly similar. Central to Heider's reasoning is the difference between personal and impersonal causality; i.e., "to what factor should I attribut a dispositional quality responsible for some outcome?" Heider (1954) claims that naive causal analysis involves procedures "in a way analogous to experimental methods." Kelley (1967) has enlarged on this notion and claims that the basic procedure of the "naive analysis" of behavior is similar to J. S. Mill's method of difference. "The effect is attributed to that condition which is present when the effect is present and which is absent when the effect is absent" (Kelley, 1967, p. 194).

Kelley (1967) views the naive analysis of causality as being very similar to the logic employed in a three-way analysis of variance. Our observations of the effects of other's actions form a cube of observations. Entities, i.e., things in the environment are the first axis; the second axis is constructed of the various people who interact with the entities; along the third axis are the modalities of interaction (behavior settings) and the times these interactions occur. In a "naive analysis of variance" the observer infers some intention to an actor's behavior when the behavior is (1) different from what most people would do in the particular situation, (2) not accounted for by lack of decision freedom (Steiner, 1971) in regard to other possible options or some lack of personal resources (ability, intelligence, etc.), and (3) it cannot be accounted for by certain

properties of the entity that are present. Thus, accurate attribution of intention in Kelley's system occurs when the actor's behavior deviates from the norm, is consistent across entities and cannot be accounted for either by lack of resources or lack of decision freedom.

The attribution of an underlying disposition to an actor on the basis of the above observations is a second inference which is made only after the naive analysis implies causality from within the actor. We first must determine whether the actor "can" produce the effect and then within this score of free movement (of the available behaviors he "may" produce) the behavior selected can be taken as revealing dispositional characteristics. Attribution of disposition is thus a two-step process. As Steiner (1971) has stated, "The attribution process involves inferring answers to two critical questions: is an observed act freely produced by the individual, and if so, which of many possible internal states (motives, needs, personality traits) is responsible for the behavior." Much research attention has been given to answering the first question (e.g., under which situations can attributions be made) whereas the second question, perhaps the more interesting one, has been largely ignored as a topic of research.

It is an empirical question whether Heider's "common sense psychology" and the "naive analysis of variance" as formulated by Kelley is an accurate analogue of the naive attribution process. If it is, it suggests that man is highly "rational" by our previous definition. It further suggests that most attributions should be veridical, as the process followed is highly similar to logical scientific analysis. Most social perception experiments examining the conditions under which dispositions are attributed to another have demonstrated that subjects seem to be processing cues according to the

naive analysis and "accurately" inferring dispositions only under "can" conditions.[3] Let us examine a number of these studies.

Studies Relevant to Attribution Accuracy

If an actor has been publicly assigned a role, his behavior should be attributed to role requirements rather than to his personal feelings. Therefore, this behavior should not be viewed as informative concerning his dispositions. Steiner and Field (1960) demonstrated this phenomenon by showing that subjects were less confident of an accomplice's opinions about desegregation when he was assigned the role of a segregationist than when he appeared to be expressing his own views, even though opinions expressed in each condition were essentially the same. Jones, Davis and Gergen (1961) also manipulated role assignment and obtained similar results. In a parallel study, Jones and Harris (1967) manipulated freedom by telling subjects that the actor has been instructed to produce a message favoring a specified point of view. They found less attribution in assignment conditions.[4]

As we discussed previously, attribution of intention should occur only if the actor's behavior differs from what most people would do in the particular situation. In the previous experiments, role conforming behavior, which is what most people would do, carries little information. However, "out of role" behavior, what most people would not do, is seen as revealing information concerning the actor's dispositions. The principle here is that

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[3]Studies involving attributions of responsibility, guilt and blame obviously are not meant for inclusion in this statement. These studies are to some degree influenced by what Heider has termed "level of causality." As Fishbein and Ajzen (1971) have pointed out, the level of causality is frequently left ambiguous. The "correctness" of attribution of the studies mentioned in the discussion to follow might be more a function of the nature of the studies than of the attribution process.

[4]The errors in attribution contained in this study will be discussed in further detail later in this paper.

deviation from norms or roles involves incurring costs (e.g., the anger of others), and therefore, according to Jones and Davis (1965) demands explanation. Explanation can consist of attributing a disposition to the actor. In the Jones et al. (1961) study mentioned above, conditions were created in which the actor deviated from role requirements. Subjects were more confident of an actor's attitudes when he deviated from the role. A similar effect was found in studies by Mills and Jellison (1967).

A further requirement for attribution to the actor in the naive analysis is that actions cannot be accounted for by limitation of the actor's other available outcomes. Steiner (1971) has suggested that "whenever an individual must choose between two or more alternatives, decision freedom should be a negative function of the discrepancies between the gains offered by the alternative options." Thus, attribution of a disposition can be made on the basis of an actor's decision with greater confidence if the perceived outcomes of other alternative decisions are highly similar. Testing this hypothesis, Ajzen (1971) has shown inference magnitude to be a positive function of decision freedom.

It should be noted that the subjects' attributions in the above studies can be called accurate only within the experimental context. The Ss never, in fact, accurately inferred that the actors were experimental confederates acting without any decision freedom.

A possible source of inaccuracy in the attribution process involves egocentric assumptions. Kelley (1967), in discussing the notion that an individual assumes that his reactions are common, refers to Heider (1954), "The person tends to attribute his own reactions to the object world, and those of another, when they differ from his own, to personal characteristics (in the other)." Inherent in this error is the further egocentric assumption

that the situational and normative constraints on the other are similar to those on the observer. This assumption may be easily made when an individual lacks information about the other's environment. While these assumptions will probably not lead to many glaring errors in attribution when the actor's situation and culture are similar to the observer's, in cases where these similarities are not present major errors in attribution can occur. Interactions involving heterocultural groups seem particularly susceptible to such misattributions, since the constraints on members of other races or cultures are not often apparent to outsiders. They may be considered so basic by the members of the different cultures that they are never mentioned and so do not become salient as explanations of behavior.

Thus, the observer may make an inaccurate attribution to the actor even though his attribution process is both "rational" and "unbiased." This occurs because the necessary information for accurate attribution is unavailable, and the egocentric assumption, which is usually adequate to supply such information, is used improperly in this instance.

We have previously mentioned in our discussion of the naive analysis that attribution of intention can most confidently be made only when an actor's behavior is not what most people would do in that situation. This suggests that a person has some idea of the probability distribution of various responses in one situation. "From his knowledge of social pressures, shared values and situational demands, he may be able to make confident estimates about the amount of consensus of responses to expect" (Kelley, 1967, p. 213). However, data collected by Triandis, Feldman and Harvey (1970, 1971a, b, c) has demonstrated that blacks and whites frequently have different norms and values concerning the appropriateness of behavior within one situation or directed toward the same person. Thus, a white's or a

black's probability distribution of responses in a situation may lead to many inaccuracies with regard to the responses of members of a different race or culture.

Studies Relevant to Bias in the Attribution Process

Although the studies cited above show that in most social perception situations, the inferences tend to be accurate, there are errors in the process. Heider (1954) and Kelley (1967) have discussed some of these errors or biases. One bias that has shown up in some studies is a tendency to give excessive weight to observed behavior and insufficient weight to the relevant situation. Heider has suggested that behavior has such..."salient properties (that) it tends to engulf the total field rather than be confined to its proper position as a local stimulus whose interpretations require the additional data of a surrounding field."

Jones and Harris (1966) suggest that some of their data can be accounted for by Heider's observation. They found that subjects tended to judge the attitude of an actor similar to his expressed opinion if this opinion was unpopular, even when the actor had been "instructed" to produce that opinion. A similar tendency to place more importance on behavior than would be expected from an "unbiased" analysis also appears to be operating in a study by Davidson and Steiner (1971). Subjects attributed decision freedom to an actor if his actual rewarding behavior indicated freedom, i.e., variable ratio schedule, even when this behavior was entirely determined by instructions given to the reinforcing agent by the experimenter. Neither of these studies is an adequate test of this hypothesis, however. In both studies the bias was a serendipitous finding. In neither study was the manipulation adequate to rule out the possibility that the subjects perceived the actor as having some degree of decision freedom in determining

his behavior (Steiner, 1971). This possible bias in attribution is one of the more interesting findings in this literature and should definitely be followed by further investigations.

A more generalized statement of this effect might be expressed as a bias towards the attribution of effects to personal rather than environmental causes. Frequently when things are going badly in organizations, blame is attributed to individuals rather than to problems of organizational structure or increasing competence of the competition. Managers of professional baseball teams and coaches of professional and collegiate football teams are frequently victimized by this process. If this personal causality is most frequently attributed to a certain type or group of people (e.g., blacks, Jews, etc.), then the phenomenon appears similar to what has previously been labeled scapegoating.

Feldman (in preparation), investigating a different type of bias, predicted that subjects prejudiced toward blacks would weight race more heavily than other stimulus characteristics (such as occupation) in stereotype attribution. Only weak support was found.

Studies Relevant to the Rationality of the Attribution Process

A number of studies (Wyer, 1970; Wyer & Goldberg, 1970; Wiggins, Hoffman, & Taber, 1969; and others) have models of the judgmental process, in a variety of contexts. These studies demonstrate two points: First, the attribution process conforms to a pre-existing mathematical model and is, therefore, systematic and "rational" (by our definition). Second, individual differences in attribution strategies exist and must be taken into account.

As an illustration of the first point, Wyer (1970) has shown that subjective judgments of conditional probabilities generally follow the laws of objective probability. Ajzen (1971) has obtained correlations around .5 between observed and predicted probabilities using a Bayesian model. Edwards (1968) has shown, however, that changes in subjective probability are consistently conservative in relation to predictions made from Bayes' theorem.

Tversky and Kahneman (1970), taking a different approach, have suggested that man is a generally poor estimator of objective conditional probabilities. Furthermore, these authors state that a number of situational factors (e.g., recency of experience, salience of experience) influence an individual's probability judgments. This point is also relevant to the previous discussion of bias in the attribution process. These negative findings do not suggest, however, that the attribution process is not "rational," only that in some situations the human attribution system is not adequately described by objective probability functions.

The individual differences approach to the problem is represented by the work of Wiggins (1971, in press) and her associates (Wiggins & Hoffman, 1968a, b; Wiggins, Hoffman, & Taber, 1969). These investigations have used multidimensional scaling techniques to discover strategies of cue utilization in judgments of intelligence. Wiggins and Hoffman (1968a), for example, found that individual differences existed in the use of cue discrepancy as a basis for intelligence judgment, suggesting that a consideration of such factors is necessary in attribution research. However, Wiggins and Hoffman (1968b) have also found that the use of "idealized individual" judgment models does not greatly improve prediction over that afforded by linear multiple regression.

In contrast, Slovic and Lichtenstein (1971) after reviewing over 600 studies of information processing, concluded that "...the evidence to date seems to indicate that subjects are processing information in ways fundamentally different from Bayesian and regression models." They further state that the success of various remedial systems for improving information processing suggests that "...judges are biased and unreliable in their weighting of information."

Thus, it seems that the question of the inherent rationality or irrationality of the human attribution (or judgment) process is an open one. It seems reasonable to assume that the process is relatively systematic and objectively describable, within the limits of human reliability. However, the relatively simple Bayesian and regression or ANOVA models (such as Kelley's) seem useful primarily as starting points in the investigation.

An Illustration

Let us illustrate some of these points by looking at a frequent critical incident reported by the white respondents: the high frequency of absenteeism and tardiness among black employees. This behavior is different from that of most of the other employees (primarily white), and thus the behavior is seen as demonstrating dispositional rather than situational causality. The dispositional cause could quite conceivably be lack of knowledge of rules (one must show up on time), or lack of initiative on the part of the actor. After the first few tardies, the actor would be informed of the rules; thus, further tardies would be perceived as lack of initiative. The observer would have additional confidence in this attribution as the actor is incurring some cost (loss of pay) for his tardiness. Implicit in this process of attribution is the egocentric assumption that the black worker has access to the same resources as the observer and to some extent shares

the same expectations, values and definitions of work that the observer does, even though he is not conforming to them. If I have access to a reliable car, reliable alarm clock and buses that run on a reliable schedule, an egocentric assumption causes me to believe that (unless provided information to the contrary) others have access to the same resources. Their behavior then is caused by dispositions (lack of initiative), not lack of resources. Poor blacks and whites, however, are frequently lacking in the resources necessary for getting to work on time. Also, if the white had the knowledge that getting to work on time is not an important norm for most ghetto blacks, he should, according to the naive analysis, be less confident in his attribution of a disposition to that individual. What we are suggesting, then, is that people make rational attributions on the basis of what information they possess. With the egocentric assumption, inferences themselves are used in making further inferences. If the information in one's system is enlarged so that the individual does not have to rely on egocentric assumptions, accuracy in attribution should be increased.

A Conceptual Framework

If the subjective probability that a person or racial group has a trait is measured, along with other prior probabilities, as a first part of the study of trait attribution from behavior, one could determine whether these subjective probabilities follow the laws of objective probabilities. Bayes' theorem is specifically applicable in these cases (see Ajzen, 1971).

$$SP\ (T/B) = \frac{SP\ (B/T)\ SP\ (T)}{SP\ (B)}$$

where:

SP (T/B) = subjective probability that a person has a trait given that he has engaged in a particular behavior.

SP (B/T) = subjective probability that a person would engage in that particular behavior given that he has that trait

SP (T) = subjective probability that a person has that trait

SP (B) = subjective probability that a person would engage in that behavior.

However, as we have seen previously, this may not be an adequate representation of the actual attribution process. The Bayesian and other probabilistic models should be thought of as starting points for the investigation of the attribution process. These models may also be used as paradigms for the study of the effects of new information on cognitive systems. Studies of the effect of previously-held stereotypes, which may be conceptualized as prior probability judgments of trait association (Feldman, in preparation), on the acceptance of new information about members of racial or ethnic groups fit well into such a model. Following Warren's (1971) theory, the effect of new information on the evaluation of racial or ethnic group members may also be investigated.

Furthermore, the individual differences approach may be used in conjunction with probabilistic models. One important question is that of possible systematic individual differences in the accuracy of the Bayesian model. The correlation across instances of a subject's subjective probability statements with thos calculated by the Bayesian formula can be used as an individual-difference variable and related to indices such as cognitive rigidity, prejudice, etc., which have previously been shown to be related to impression formation. The deviations from predicted subjective probabilities may be analyzed to determine what sorts of errors are associated with different cognitive styles.

Of course, theoretical development must be part of any such program. By assessing the situations where Bayesian and regression models apply and where they are inadequate, and the individual-difference variables associated with such adequacy or inadequacy, both practical and theoretical goals may be achieved.

Application to Problems of Cultural Training

It seems that the attribution process is often accurate. However, in attribution to members of another culture (with different norms, values and expectations), incorrect attributions can frequently be made. One method for reducing the misunderstandings that might occur would consist of actually training naive observers to make more veridical attributions to persons of another race. Such a program might consist of alerting the trainee to biases that frequently occur in the attribution process, particularly "egocentric assumptions" and "disregard for the situation." This type of training program could also alert trainees to differences in beliefs, values and norms between races and how these might lead to inappropriate attributions. The general format might still include the use of critical incidents, using as exemplars those differences that have appeared in the measurement of black and white subjective culture. The effectiveness of any such program could be assessed by observing the increase in accuracy, rationality, and unbiasedness of attributions made in experimental situations.

Many skeptics will doubt that changing evaluations through the presentation of information, a cognitive variable, actually does much in the way of changing behavior. However, the notion that addition of information actually can mitigate negative evaluations and resulting negative behavioral sanctions against another has been demonstrated in numerous studies (see

Lanzetta & Hannah, 1969; Weiner & Kukla, 1970; Wiggins et al., 1965). A typical design has included manipulations of the perceiver's information concerning the actor's ability and motivation. It is generally found that actors with high ability and low motivation receive lower evaluations and overt negative reinforcements from the perceiver than those with high motivation and low ability even when performance remains constant across conditions.

This does not mean, however, that the individual can act appropriately in all situations, even if he makes a correct attribution. Doob (1947) suggested that there may not be any one-to-one relationship between cognitions and overt behavior. He has argued that cognitions and behaviors are independently reinforced, thus changing one will not necessarily affect the other. The primary goal of attribution training is to enable the trainee to make veridical trait and causal attributions. This is cognitive training. If we expect our trainees not only to infer correctly, but also to behave appropriately on the basis of his inferences, we will need to couple behavioral training with our attribution training.

The experimental literature also suggests that the trainee should already have some motivation for learning a more accurate attribution process. This line of reasoning is based on the premise that accurate knowledge concerning another's traits leads to better prediction and understanding of his subsequent behavior than does inaccurate knowledge. Kelley (1955) and Pervin (1963) have postulated a need to know and predict the environment. Brim and Hoff (1957) have discussed the desire for certainty which involves understanding the environment and making it predictable. Festinger (1954) has demonstrated a drive to evaluate one's own opinions and abilities. Byrne and Clore (1967) have suggested that all of these concepts can be discussed in terms of White's (1959) effectance motive or a motive for competence.

Of course, the goals of any such training program must be specified in advance, and the program designed to reach those specific goals. A program designed to change attitudes toward a particular group would necessarily be very different from one designed to increase accuracy of attribution. Both may be based on an attribution-theory approach, however. (For a further discussion of this point, see Triandis, Weldon, & Gwynn, in preparation.)

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